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The Use of *Mitragynine speciosa* ("Krathom"), an Addictive Plant, in Thailand

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This study describes patterns and consequences of chewing leaves of krathom, Mitragynine speciosa, Kroth., traditionally used by rural people in Thailand as a mild narcotic. We surveyed 149 long-term regular users (daily for $\geq$ 5 years), 168 occasional users (used only in social situations or medicinally, less than once a week), and 116 nonusers from three rural villages where krathom use was traditional in southern Thailand. Users focused on the perceived advantages of krathom in relation to increased work endurance, medication, and as a substitute for other hard substances rather than its harmful effects. Limitations regarding self-report and generalizability of the study were noted, and further longitudinal study among other population groups is required for educating people and users about possible harmful impacts of krathom use.

Keywords *Mitragynine speciosa*; krathom; patterns of use; southern Thailand

Introduction

Mitragynine speciosa, Kroth. (local name: "krathom"), illustrated in Figure 1, is a tree native to Southeast Asia, in the same family as the coffee tree (Rubiaceae). The leaves of krathom have been traditionally used in Thailand, especially by rural people in the south, as a mild narcotic. Krathom has also been used as an herbal drug from time immemorial in some Southeast Asian countries (e.g., Malaysia and Myanmar). Nearly all krathom use is by chewing fresh leaves, although other ways of use include grinding up and eating fresh or dried leaves, in cooking and making it into a tea. Krathom use was first reported several decades ago, and several purposes were identified; e.g., as an opium substitute by native Malayans (Burkill, 1966) and as a wound poultice, cure for fever, and suppressor of opiate withdrawal syndrome (Burkill and Haniff, 1930). The effects of krathom were first reported in Thailand in 1975 as "calming the mind" and increasing work output, and its use was considered culture-bound and ritualistic in rural villages (Suwanlert, 1975). It is illegal in Australia, Malaysia, Myanmar, and Thailand (all of which impose relatively severe penalties for possession of the plant; Siebert, 2006). The Thai government passed the Krathom Act in 2486 (1943), which makes planting the tree and possession, import, and export of krathom leaves and other parts of the plant illegal. At present, Krathom is classified in the same

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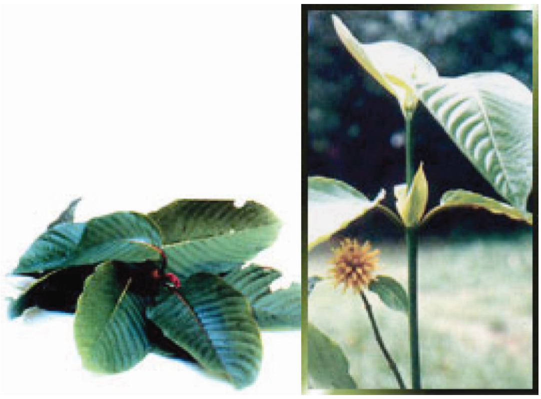


Figure 1. *Mitragynine speciosa*, Kroth.

enforcement class as cannabis, opium, and hallucinogenic mushrooms, Category V of the Addictive Substances Law of Thailand, 1979. The penalties in the most recent amended version of this law (Version 5) in 2002 for production, import, and export are imprisonment of not more than 2 years and a fine of not more than 200,000 Baht (approx. US$5,000), and imprisonment of not more than 1 month or a fine of not more than 2,000 Baht (US$50) for use (Vitayanartpaisarn et al., 2005).

The National Household Survey of Substance Users in 2003[1] estimated that 221,600 people nationwide (0.5% of the adult population) had used krathom within 30 days of the survey. The highest rate of use was in the southern region (128,200 users or 2.2% of the adult population in the south). Men and middle-to-older age groups had a higher rate of use than women and younger age groups. Among those who reported using krathom, a high proportion reported also having at some time used cannabis or amphetamine (Administrative Committee of Substance Abuse Academic Network, 2003). Annual surveys of drug use among high school students in southern Thailand indicated that krathom was the most commonly used illicit substance with a growing rate of 2.3, 3.2, and 4.2% in 2002–2004. The perceived disapproval, unavailability, and risk of krathom use were lower than other illicit substances (Assanangkornchai, Pattanasattayawong, Samangsri, and Muekthong, 2007). Recent enforcement statistics show that krathom indictments have been increasing. In 1993 there were 506 cases, growing to 1755 in 2000. The numbers declined briefly to 1132 and 1055 cases in 2001–2002 but then increased markedly again during the intensive implementation of the Thai government's "War on Drugs" policy in 2003 to 2279 cases, while hard substance indictments such as methamphetamine and heroin decreased. In parallel, krathom abuse has been recorded as being common among substance abusers as a substitute for other unavailable substances (Jitpiromsri, 2005).

Pharmacological investigations of krathom were first performed in 1932. The plant was found to be a central nervous system stimulant with a cocaine-like effect from the mitragynine alkaloids (Grewal, 1932a, 1932b). Over 25 alkaloids have been isolated from krathom, most abundantly three indoles and two oxindoles. The three indoles are mitragynine, paynanthine, and speciogynine, the first two of which appear to be unique to this species. The two oxindoles are mitraphylline and speciofoline. Other alkaloids present include other indoles, and oxindoles such as ajmalicine, corynanthedine, mitraversine, rhychophylline, and stipulatine (Beckett, Shellard, Phillipson, and Lee, 1965, 1966; Shellard, 1974, 1989; Shellard and Alam, 1968, Shellard and Lees, 1965). Several later international studies reported pharmacological properties of mitragynine alkaloids, such as morphine-like antinociceptive effects (Matsumoto et al., 1996; Thongpradichote et al., 1998); an inhibitory effect on electrically stimulated contraction of the ileum (Watanabe, Yano, Horie, and Yamamoto, 1997); and leading to gastric acid secretion through the opioid receptors in animals (Tsuchiya et al., 2002). Still, only sketchy information is available concerning the effects and patterns of krathom use in Thailand. Most available data are based on anecdotal studies and personal observations or communication with users. This lack of hard data has led to a debate about whether krathom is addictive and harmful to health, whether its use should be decriminalized, and whether planting of krathom trees should continue to be banned. This article is a part of a larger project designed to study the demand and impact situation of krathom in Thailand. The objective of the current article is to describe the patterns of krathom use in the various types of users and their opinions toward its use.

Subjects and Methods

Since knowledge regarding patterns of use, users' perceived effects of krathom, and characteristic symptoms and signs of use, dependence or withdrawal is scarce, we derived this information through the first qualitative phase of study to form the basis for questionnaire development for use in the second phase. Participants in this phase included 47 known krathom users and 19 non-using family members, neighbors, and friends from the rural villages of three provinces in southern Thailand. These provinces have a tradition and reputation for krathom use. Convenience sampling was used to recruit these participants. A village health volunteer in each village invited villagers whom he knew to be krathom users or non-users to participate in the study. Data regarding patterns of use, symptoms and signs observed after use, reasons for and the setting of first use and continuing use, the perceived effects, and the advantages and disadvantages of krathom use were obtained through in-depth interviews and focus group discussions. (The detailed results of this phase will be reported elsewhere.)

In the second phase, we recruited 433 subjects aged 15 years and over from rural villages in the same three provinces. As the study was not intended to examine the prevalence rate of krathom use but to characterize patterns of use in known users, purposive sampling was used to recruit participants. Subjects were classified into three groups according to their pattern of krathom use: 149 long-term, regular users (used daily for more than 5 years), 168 occasional users (used only in social situations or for medicinal purposes and less than once a week), and 116 nonusers who were living in the same village. Potential participants were identified by a village health volunteer, and their pattern of use was confirmed by the research staff, who were psychiatric nurses or social workers, through a structured interview. The research staff has been involved in several research projects relating to substance use in Thailand and were experienced in collecting research data through a structured interview. The subjects participated in a one-hour face-to-face structured interview, which took place in the village center or the subject's own home. Food, drink, and some money [100 Baht, (US$2.50)] were given to the respondents after the interview session. Participation in the study was voluntary and all respondents gave their written consent. The participation rate was high, with only two or three members of each group approached refusing to participate. As the use of krathom in these villages has been a tradition for more than 50 years and most of the villagers approved of its use, respondents had no hesitation about participating in the study and answered questions freely without fear of being stigmatized as a drug addict. The questionnaire contained information on demographic characteristics, attitudes regarding krathom use and its legal status, patterns of use, symptoms of withdrawal and dependence, and perceived health, family, social and occupational effects of use. To protect the confidentiality of the participants, the participant's name and all identification data were placed on a separate section of the questionnaire. The data collection procedure was approved by the Ethics Committee for Research in Human Subjects of the Faculty of Medicine, Prince of Songkla University.

The questionnaire development was based on data from the qualitative phase and a review of characteristic symptoms and signs of dependence and withdrawal with other addictive substances. The first draft of the questionnaire was tested on 48 participants in a rural village similar to the study sites, who found it somewhat complicated. A modified questionnaire was then tested on another group of 21 villagers, again with similar backgrounds to the study subjects. The comprehensibility and acceptability of the questionnaire were deemed satisfactory by the subjects this second time. Data analysis included descriptive statistics for all variables, chi-squared tests, and adjusted odds ratios for age and sex with 95% confidence intervals as indicated.

Results

Demographic Characteristics

The subjects were 350 men (144 regular, 149 occasional, and 57 non-users) and 83 women (5 regular, 19 occasional, and 59 non-users) with a mean age (±SD) of 45.7 ± 13.6 years. As there were more male krathom users in the villages than women, we recruited a higher number of male subjects in our study. Most were Buddhists (91%), and had completed only primary school study (67%). About 58% were engaged in agricultural work such as rice farming, fruit gardening, rubber planting, and fishing, another 24% were long-haul drivers or factory or construction workers, and the rest were housewives, students, shop owners, and government officers. Almost 81% were married and one third had been living in the same village since birth.

Opinions on the Use of Krathom in the Community

Regular users were significantly more likely to believe that the majority of men in their village and at least half of their close friends were using krathom, compared to occasional users and non-users. Respondents in all three groups were similar in their perception that krathom was not commonly used among female villagers. Most respondents believed that people in their community used krathom to improve their work performance by increasing their endurance and tolerance to sunlight, to relieve fatigue, and to treat some illnesses such as diabetes mellitus, coughing, diarrhea, and hypertension. Using krathom was perceived as the user's personal choice, not disruptive to others, and as doing more good than harm for the users. About 40% of subjects also thought that using krathom was better than using other substances, such as methamphetamines, heroin, or alcohol. Non-users were more likely to think that krathom users were drug addicts and that krathom use was bad for health compared to occasional or regular users. Most subjects were aware of laws concerning the prohibition of krathom use and planting and that there was a legal mandate to destroy krathom trees in some areas but they did not support these laws. Conversely, they, especially regular users, strongly supported the legalization of krathom use and planting (Table 1). Male and female respondents were not different with regards to their opinions toward the use of krathom in the community ($p > 0.05$ for all comparisons, adjusted for the user groups).

Table 1
Opinions about the use of krathom in the community

	Non-users (116) N(%)	Occasional users (168) N(%)	Regular users (149) N(%)	P-value
Perception of number of male users				
Few or none (0–20%)	62(53)	88(52)	48(32)	0.004
About half (40–60%)	37(32)	64(38)	67(45)	
Most or almost everyone (>70%)	16(14)	14(8)	34(23)	
Perception of number of female users				
Few or none (0–20%)	115(99)	162(96)	145(97)	0.237
Perception of reasons why people used krathom				
Increases work efficiency	100(86)	140(83)	127(85)	0.793
Better tolerance of hot sun	68(59)	113(67)	119(80)	0.005
Tiredness relief	46(40)	79(47)	90(60)	0.013
Medication	36(31)	89(53)	68(46)	0.006
Opinion of krathom use by other people				
Private and personal	66(57)	105(63)	92(62)	0.291
Not disturbing anyone	69(59)	101(60)	106(71)	0.018
Better than using other substances	45(39)	65(39)	59(40)	0.315
Krathom users are addicts	29(25)	16(10)	15(10)	<0.001
Krathom use is bad for health	32(28)	24(14)	14(9)	<0.001
Krathom users are disgusting	16(14)	10(6)	14(9)	0.056
Opinion toward laws concerning krathom use and plantations				
Awareness of krathom laws	90(78)	123(73)	109(73)	0.667
Disagree with banning use/planting	58(50)	127(80)	123(84)	<0.001
Agree with legalizing use/planting	64(55)	116(69)	125(84)	<0.001
Use of krathom by family members				
Children	4(3)	9(5)	22(15)	0.003
Parents	16(14)	34(20)	38(25)	0.143
Siblings	20(17)	54(32)	53(36)	0.012
Grandparents	13(11)	34(20)	36(24)	0.119

Note. Percentages are rounded to the nearest whole number and total percentages may not equal 100% because of some missing data. P-value from chi-squared statistics.

Regular users were twice as likely to have had siblings, children, parents, or grandparents who had used krathom than those who were non-users (OR = 1.9; 95% CI = 1.2–3.2). Occasional users also tended to have more family members who had used krathom compared with non-users; however, the association was not statistically significant. The number of the subjects' wives who used krathom was found to be small in all three groups (Table 1).

Experience of First Using Krathom

The data in the following sections were obtained from 149 regular krathom users (144 males and 5 females) and 168 occasional users (149 males and 19 females).

The average ages (±SD) of first use for occasional users and regular users were respectively 28.7 ± 11.5 years and 30.1 ± 11.1 years, with a range of 9–68 years. The average

Table 2
Experience of first use and patterns of current use

	Occasional users N (%)	Regular users N (%)	P-value
Reasons for first use			
Curiosity	108(64)	95(64)	0.080
Peer pressure	22(13)	23(15)	
Medication	24(14)	9(6)	
Promoting work	12(7)	19(13)	
Feeling at first use			
Bitter taste in mouth	132(79)	112(75)	0.473
Dizziness	47(28)	47(31)	0.488
Freshness, sprightliness	20(12)	32(21)	0.022
No feeling	21(12)	12(8)	0.196
Reasons for current use			
To be able to work hard under direct sunlight	90(54)	123(82)	<0.001
To relieve fatigue	57(34)	97(65)	<0.001
To control weight	14(8)	5(3)	0.062
To relieve sleepiness	28(17)	47(31)	0.002
Use as medication	51(30)	28(19)	0.018
Use in social setting	20(12)	20(13)	0.685
Reason for abstinence			
No need to use (stopped doing hard work)	61 (36)	18(12)	<0.001
Moving away (krathom was not available)	30(18)	22(15)	0.454
Fear of dependence	26(16)	2(1)	<0.001
Fear of law violation	10(6)	3(2)	0.078
Sickness	8(5)	12(8)	0.342

Note. Percentages are rounded to the nearest whole number and total percentages may not equal 100% because of some missing data. P-value from chi-squared statistics.

durations of use were 15.9 ± 13.3 (range ≤ 1–60 years) and 18.3 ± 12.8 years (range = 5–54 years) in occasional and regular users, respectively. Women tended to start using krathom at a higher age than did men (32.3 ± 14.2 vs. 28.9 ± 10.9); however, the difference was not statistically significant after adjusting for user group.

The most common reason for starting krathom use in both groups was a desire to see what its effects were. Other reasons included peer pressure, using krathom as a medication, and for enhancing work performance. Occasional users were more likely to start using krathom as a medication than were regular users. Most subjects first used krathom with friends or relatives (69%). The most commonly noted experiences for first-time users were a bitter aftertaste and dizziness (Table 2). Regular users tended to have a more positive feeling towards krathom, e.g., sprightliness or a sense of well-being on their first use, than did occasional users (OR = 2.0; 95% CI = 1.1–3.7).

Patterns of Current Krathom Use

The most common reasons for currently using krathom were related to work, such as being able to work harder for longer periods of time under direct sunlight, and to relieve the fatigue of overwork. Other reasons included using it as a medication (e.g., as a cough suppressant and controlling diabetes), controlling weight, relieving sleepiness, and as a substitute for other substances (Table 2). Women were almost six times more likely to use krathom as a medication compared to men (OR = 5.9; 95% CI = 2.5–14.1, adjusted for user group).

Regular users were significantly more likely to chew more krathom leaves per time and more times per day than occasional users. The average number of leaves/time and average times/day were 1.4 (95% CI = 1.3–1.5) and 2.2 (95% CI = 1.9–2.6), respectively, for occasional users and 2.4 (95% CI = 2.1–2.7) and 4.8 (95% CI = 4.1–5.4), respectively, for regular users. As a result, the total average number of leaves chewed per day was 4.1 (95% CI = 2.7–5.5) and 11.5 (95% CI = 9.2–13.8) for the occasional and regular user groups, respectively. The amount and frequency of use per day was independent of age for the users; men, however, were more likely to use a higher amount of krathom and more often than were women.

Krathom leaves were usually chewed without swallowing and 90% of users drank water, tea, coffee, a caffeinated energizing beverage or palm sugar syrup or ate salt afterwards. Regular users were more likely to use krathom by themselves, compared to occasional users (64% vs. 40%, OR = 2.7; 95% CI = 1.7–4.3). Occasional users tended to use krathom in the context of a social occasion with friends at the village shop or when attending a funeral ceremony or a local party or sports tournament. Most users obtained krathom leaves from neighbors for free (61%) or from a krathom tree grown on their own property (41%) while a few bought them from neighbors or shops in the village. Regular users were almost four times (58% vs. 26%; OR = 3.98; 95% CI = 2.5–6.4) more likely to grow krathom trees on their property for their own use than were occasional users.

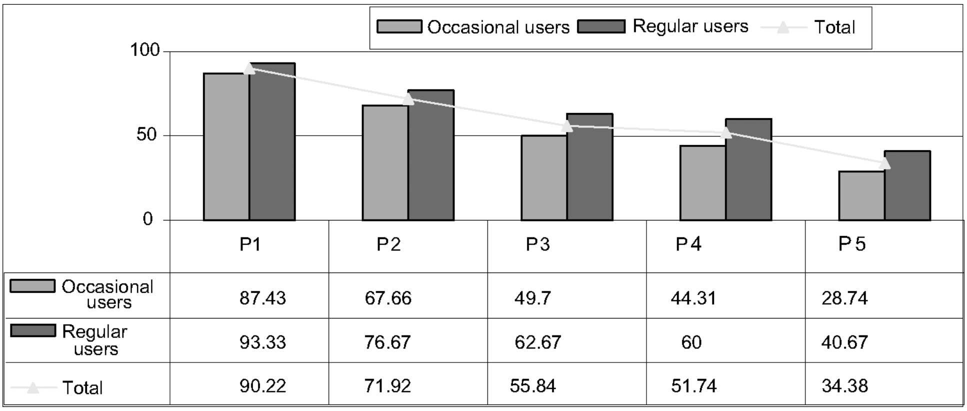
The Users' Opinions of Personal Use of Krathom

Of all users, 61% of regular users and 12% of occasional users believed they were dependent on krathom, with reasons including an inability to quit, a need to use it every day in order to work normally, a physical pain in their back, legs, or muscles, and a strong desire for krathom when not using it. For those believing they were not dependent, their reasons included an infrequency of use, an ability to stop krathom use whenever desired, and the use of trivial amounts on such occasions as they used it for its medicinal effects at times of illness or as a stimulant during work.

Most users believed that family members felt neutral about their use as they neither supported nor warned them against using it (76–81%). Regular users were more likely to believe that family members either condoned their use or used it as well since no one seemed to discourage their use of krathom (8% vs. 3%).

Consequences of Krathom Use

Seventeen percent of all users experienced constipation as a result of using krathom but had their own methods of resolving the problem; e.g., chewing a leaf without swallowing, drinking copious amounts of water, or eating large portions of fruits and vegetables. Also, 32% had at some time felt intoxicated by krathom with symptoms of fatigue, shaking hands, and headaches. They relieved this condition by working strenuously and sweating profusely, drinking ice water, having a cold shower, eating sour fruit, or sleeping. Some users stressed that these symptoms happened only when users were unaware of the correct method of use, as on the first use or when eating the whole krathom leaf without spitting out the fiber.

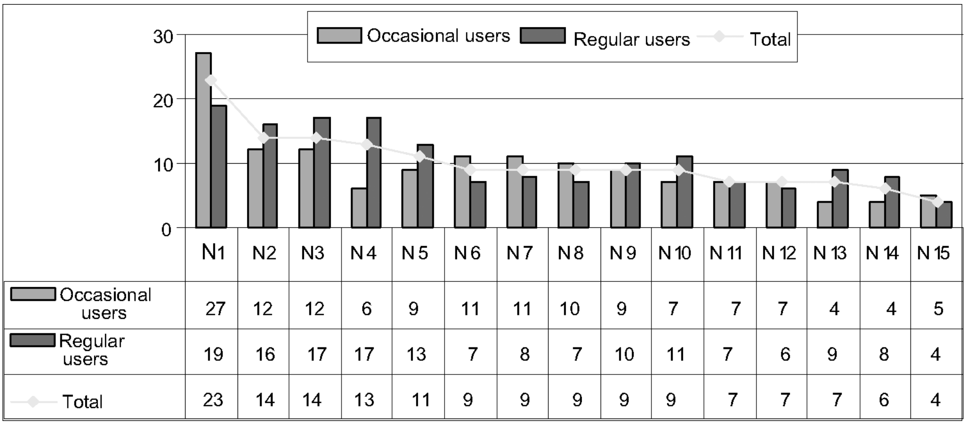


	P1	P2	P3	P4	P5
▭ Occasional users	87.43	67.66	49.7	44.31	28.74
■ Regular users	93.33	76.67	62.67	60	40.67
▲ Total	90.22	71.92	55.84	51.74	34.38

Figure 2a. Perceived consequences of krathom use among regular and occasional users. Positive consequences (%). P1 working harder and longer, P2 feeling happy/sprightly and staying in a good mood, P3 sleeping soundly, P4 staying healthy and P5 good appetite.

The perceived benefits of krathom use included helping users work longer and harder, feeling happy/sprightly, maintaining a good mood, sleeping soundly, and being healthy (Figure 2a). The percentage of users reporting the negative effects of using krathom was comparatively low (4–14% of all users). The negative effects included a perception of less productivity, a decreased sexual drive, fatigue, poor health, wasteful spending habits, dizziness, poor concentration and distractedness, difficulty sleeping, wasting working time, irritability, poor thinking ability, impaired memory, laziness, and social withdrawal (Figure 2b).

Of all regular users, 62% had previously stopped using krathom 1–3 times (39% and 82% for regular and occasional users). The median duration of abstinence was one month, and the longest time was 6 years. Common reasons for abstaining were no need to use as



	N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	N13	N14	N15
▭ Occasional users	27	12	12	6	9	11	11	10	9	7	7	7	4	4	5
■ Regular users	19	16	17	17	13	7	8	7	10	11	7	6	9	8	4
◆ Total	23	14	14	13	11	9	9	9	9	9	7	7	7	6	4

Figure 2b. Perceived consequences of krathom use among regular and occasional users. Negative consequences (%). N1 poor appetite, N2 less productivity, N3 decreased sexual drive, N4 tiredness, N5 poor health, N6 wasting money, N7 dizziness, N8 poor concentration and distractibility, N9 difficulty sleeping, N10 wasting working time, N11 irritability and anger, N12 poor thinking ability, N13 impaired memory, N14 laziness and N15 social withdrawal.

no longer doing hard work and moving to a place where it was unavailable. They resumed using it because of moving back to the village, returning to hard work, or needing krathom as medication (Table 2).

Discussion

The current article is the first study to examine the patterns of krathom use and the effects of krathom empirically in Thailand. The study revealed the importance of the social environment in determining the use of krathom. The subjects of the study were living in communities where krathom was widely available and its use was acceptable and traditional. Users had strong confidence in the benefits of krathom use and also believed that most men in their community used krathom. Similar to other traditional natural substances like marijuana and opium, the prevalence of use was governed by such factors as ease of access, price, and social acceptance (Kalant, 1997). The most common reason for starting krathom use was "wanting to try out the effects of krathom." This is also in keeping with the reasons provided by users of other addictive substances in Thailand; for example, amphetamines, alcohol and marijuana (Assanangkornchai, 2004). Krathom has been reported to be a central nervous system stimulant and has a cocaine-like effect (Jansen and Prast, 1988); users report feeling alert and sprightly after using it. As all these factors, including the host, substance, and environment are cumulative in effect (Pandina, 2003), people become increasingly susceptible to the use of krathom.

Unlike other substances such as marijuana, methamphetamines, and volatile substances, which are more prevalent among teenagers or young adults in Thailand, krathom is considered to be mainly a substance for adults and the elderly, which is reflected in this study. The age of first use for most users was in the late 20s. Most users were currently middle-aged and elderly. This finding is also consistent with the results of the National Household Survey of Substance Use in 2003, which found that the proportion of the population who reported currently using krathom within the past 30 days was highest in the 45–65 years age group (80% of all current users; Administrative Committee of Substance Abuse Academic Network, 2003). However, similar to the users of other substances, the current younger users tended to start using krathom at a younger age than had the older users. Our other studies in Thai adolescents and substance abuse populations also found that krathom was the most well known substance among southern Thai high school students (Assanangkornchai et al., 2007) and juvenile detainees (Assanangkornchai, Pattanasattayawong, Samangsri, and Muekthong, 2004c) and was commonly used by substance abusers as a replacement for other unavailable substances (Assanangkornchai, Pattanasattayawong, Samangsri, and Muekthong, 2004a). These findings may suggest that krathom use may become more prevalent among younger generations, and these groups should be watched with caution in case krathom use in Thailand is repeating the epidemic patterns of other natural substances such as marijuana.

Most respondents, both users and non-users, had a tendency to perceive the advantages of krathom rather than its harmful effects. Although most regular users admitted to being dependent on krathom, they did not see this as a problem as they had learned how to use krathom safely, chronic adverse effects like constipation were tolerable, and there were no serious medical complications. The evidence is contradictory concerning the efficacy of krathom as a medicine for coughing and diabetes, as a replacement for more dangerous substances or as a means of improving mental and physical functioning. At this time, the weight of evidence obtained from this study and other previous studies is insufficient to support the claims of these benefits. Further research is still needed to educate the public and users about the advantages and disadvantages of krathom use, and preventive measures to reduce usage because of both short-term and long-term possible harmful effects of its use.

This study has some limitations. First, the data were retrospective and self-reported and thus subject to recall and reporting biases. For some sensitive questions, especially those relating to experiences and consequences of use, some degree of underreporting may have occurred. However, we suspect this is a minor problem because there is no stigmatization around krathom use in rural southern Thailand, and our subjects, traditional krathom users, would not have felt a reason to hide their use. Moreover, data collection was completed in their own home or village where confidentiality was assured, increasing the likelihood of reliable and valid self-reports. Still, recall biases may have occurred, such as recall decay or forward telescoping, when subjects were asked about something happened to them in the far past such as their age at first use of krathom. Prospective longitudinal studies that follow krathom-using subjects over a period of time to assess the patterns and consequences of use are needed to minimize such bias. We should also consider that the study was conducted in rural villages in the south where krathom use is traditional, so generalizability may be limited. Notwithstanding these limitations, our study is the first to document the complex issue of the use of krathom, a native, natural addictive substance, commonly used in rural areas of developing Southeast Asian countries.

Acknowledgment

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Note

1. The National Household Surveys of Substance Use were conducted in 2001 and 2003 with the objective of estimating the number of people involved with alcohol and substance use. The third one is planned to be in 2007 and then tri-annually after that. The Administrative Committee of Substance Abuse Research Network (ACSAN) did the surveys. Systematic national stratified multi-stage household sampling was employed, with over 40,000 respondents from 40 provinces both in the rural and urban areas all over the country included in each survey.

RÉSUMÉ

L’utilisation du speciosa de Mitragynine (“krathom”), une usine provoquant une dépendance, dans l’abrégé sur de la Thaïlande

Cette étude décrit des modèles et des conséquences de mâcher des feuilles de krathom, le speciosa de Mitragynine, Kroth., traditionnellement employé par les personnes rurales en Thaïlande en tant que narcotique doux. Nous avons examiné 149 utilisateurs réguliers à long terme (quotidiens pendant 5 années), 168 utilisateurs occasionnels (utilisés seulement dans des situations sociales ou médicinal, moins qu’une fois par semaine) et 116 nonusers de 3 villages ruraux où l’utilisation de krathom était traditionnelle en Thaïlande méridionale. Les utilisateurs se sont concentrés sur les avantages perçus du krathom par rapport à la résistance accrue de travail, médicament et comme produit de remplacement pour d’autres substances dures plutôt que ses effets nocifs. Des limitations concernant art de l’auto-portrait-report et generalizability de l’étude ont été notées, davantage d’étude longitudinale entre d’autres groupes de population est exigée pour instruire des personnes et des utilisateurs au sujet des impacts nocifs possibles d'utilisation de krathom.

RESUMEN

El uso del speciosa de Mitragynine ("krathom"), una planta adictiva, en el extracto de Tailandia

Este estudio describe patrones y consecuencias de masticar las hojas del krathom, speciosa de Mitragynine, Kroth., usado tradicionalmente por la gente rural en Tailandia como narcótico suave. Examinamos 149 usuarios regulares a largo plazo (diarios por 5 años), 168 usuarios ocasionales (usados solamente en situaciones sociales o medicinal, menos que una vez por semana) y 116 nonusers a partir de 3 aldeas rurales donde estaba tradicional el uso del krathom en Tailandia meridional. Los usuarios se centraron en las ventajas percibidas del krathom en lo referente a resistencia creciente del trabajo, medicación y como substituto para otras sustancias duras más bien que sus efectos dañosos. Las limitaciones con respecto uno mismo-informe y al generalizability del estudio fueron observadas, el estudio longitudinal adicional entre otros grupos de la población se requiere para educar la gente y a usuarios sobre impactos dañosos posibles del uso del krathom.

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